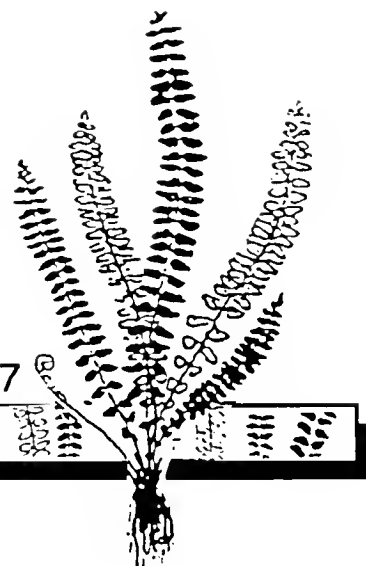


Hardy Fern Foundation NEWSLETTER

Editor Sue Olsen ■ VOLUME 7 NUMBER 3 ■ SUMMER 1997



President's Report

Anne Holt and Jocelyn Horder

The new co-presidents wish to thank Sylvia Duryee for her effective leadership over the past three years. The Hardy Fern Foundation has continued to thrive and build for the future under her leadership.

We wish to thank Sue Mandeville for all of her time and hard work in developing the beautiful Hardy Fern Foundation home page on the Internet. Look for us at <http://darkwing.uoregon.edu/~sueman>. Watch it for future information on our activities and expanded information on ferns and their cultivation. (See related article on page 31.....Ed.) We also have a new e-mail address to answer questions about membership hffmembership@juno.com.

The generous gift from Harriet Shorts to the Hardy Fern Foundation has made possible the development of a future fern display garden at the Bellevue Botanical Garden. Recently our members put in an initial planting of 500 ferns along the popular main woodland trail and it has already generated much public interest. Board member John van den Meerendonk has developed an overall plan for the fern garden. More ferns will be added in the future.

Members also visited our display garden at Lakewold which is rapidly become a mature garden. New labels were put in to bring the information up to date. Sue and Herman Entz will keep the labels current.

Our energetic new part time employee, Michelle Bundy has been growing many different species of ferns from spores and plugs and has filled our hoop house with a variety of ferns for future sales and distribution to satellites, display gardens and members.

We have been asked as "Friends of Plants" to spread the word about a major new garden under development in Silverton, Oregon: *The Oregon Garden*. This public display garden and botanical complex is in the planning stages and is expected to eventually grow to 240 acres. The developers are understandably excited about the project. We do not distribute our mailing list, but they would like to reach interested gardeners. To be put on their mailing list, send your name and address to Miles McCoy, Project Coordinator, Oregon Garden Project, 2780 S.E. Harrison, Suite 204, Milwaukie, Oregon 97222, (503) 653-8875.

The Fern Festival was a great success. From the sale of ferns and companion plants we netted \$2840. 50% of which goes to the HFF and the other 50% to the Northwest Horticultural Society. The slide show and talk by Sue Olsen on Ferns of New Zealand was exciting and informative. The photography was superb.

At the Annual Meeting held on that same evening the new board members and officers for the Hardy Fern Foundation were elected. We look forward to working with you.

And from your retiring president - a project: **How to Make Fern Prints**

Dip ferns well in common porter (a dark beer or stout). Lay fern fronds flat between white sheets of paper with slight pressure and let dry. Use for stationery, wrapping paper etc. You can also use other fine-leaved plants.

Welcome New Members

Norcross Wildlife Sanctuary

Ray Birdsall III

Roger Boyles

Linda Brock

Richard Brown

Michelle Bundy

Gerald Caffery

David Conner

Connie Dana

Thomas Donnelly

Ann Herrington

Charles Higgins

Veali Holtcamp

Brock Laffoon

Jean Peterson

David Schwartz

Marie Standifer

Bill and Claudia Thibadeau

Mrs. Wesley Thomas

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Polystichum Rigens

James R. Horrocks

This is a handsome Japanese species that has been overlooked in botanical literature. It is briefly mentioned in Richard Rush's book and afforded a short paragraph in *Ferns for American Gardens*, by John Mickel. There is an excellent photograph of it in Mickel's book. Reginald Kaye gives it a decent paragraph in *Hardy Ferns* but the technical description is found (in English) in *Flora of Japan* by Jisaburo Ohwi.

This species is limited to Japan where it is described from Honshu (Kanto district and westward). It is in some respects like a larger version of *P. tsus-simense* but they are not likely to be confused. *P. rigens* is more likely to be mistaken for *P. neo-lobatum*, a much rarer species. Differences, however, are several, and include the fact that the basal pinnae in *P. rigens* are larger than other pinnae on the frond. In *P. neo-lobatum*, the basal pinnae are smaller. Also in *P. rigens*, the familiar auricled pinnules often overlap the rachis, a condition not as common in *P. neo-lobatum* except toward the upper third of the frond. The rachis itself is deeply grooved and less scaly than in *P. neo-lobatum*. The rachis in the latter is not grooved and rather copiously covered with small brown scales, giving *P. neo-lobatum* an almost shaggy appearance. The fronds of *P. rigens* are not as elongated or sword-shaped as they are in *P. neo-lobatum* and are not nearly as glossy. Finally, new growth from *P. rigens* has a faint skunk-like smell, similar to the odor of Fritillarias (Crown Imperials). It is especially noticeable if the young fronds are exposed to morning sun. As far as I know, this odor is not present in any other species of *Polystichum*. It is not so noticeable as to detract from its beauty and older mature fronds have no detectable odor. The young fronds, unfortunately, are often attacked by slugs which seem to be drawn to the scent.

This fern grows in open ground on wooded hillsides in Japan, the fronds being mostly stiff and bristly. It is evergreen but of somewhat more cautious growth than many of its relatives.

Description: The rhizome forms a short erect crown. The stipes can be quite long, from 4 inches to over 12 inches in length and often densely scaly, the scales mostly brown above, blackish below. The narrowly triangular fronds are bipinnate for the most part, becoming pinnate-pinnatifid toward the apex. They are firmly coriaceous (leathery) and quite evergreen, and somewhat glossy, but not nearly exhibiting the sheen found in *P. neo-lobatum*. The pinnae are lanceolate, the lower ones having a very short stalk. The pinnules are obliquely ovate, and acute with a firm spine at the tip. They curve toward the pinnae apex and are spine-toothed to subentire, smooth on the upper side, with scattered thread-tipped scales beneath. As has been mentioned, the pinnules which form the auricle often overlap the rachis. This characteristic is also found in *P. tsus-simense*, *P. xiphophyllum*, and taken to an extreme in *P. mayebarae*, where the pinnules actually overlap the adjacent pinnules across the rachis. The sori in *P. rigens* are borne in two series on the pinnules between the margin and the costule or midvein. The indusia are membranous, impressed in the center, and detach very early. The spores are dark brown.

Culture: Mickel lists this fern as moderate in its ease of cultivation. Here in Utah, it is of rather slow growth, not flourishing like its close cousins, *P. neo-lobatum* and

P. mayebarae. Slugs can be a real nuisance, as has been previously noted. They seem attracted to the skunk-like odor of the new growth. This fern is slow to awaken in the spring, at least in Zone 5. It will grow in open ground but also likes the company of large rocks. It is also unpredictable, growing spectacularly as in the year the accompanying photograph was taken, and then less so in other years. It has survived winters well below 0 degrees here with little snow cover. The fronds can grow up to 30 inches long and are erect and arching. This fern may do better in areas of higher humidity and rainfall and with less severe winters. It is a handsome addition to the fern garden, contrasting well with the smaller, more petite *P. tsus-simense*.

References:

Flora of Japan (1965)
Jisaburo Ohwi
Smithsonian Institute,
Washington, D.C.

Ferns and Fern Allies of Japan (1992)
Edited by Kunio Iwatsuki
Heibousha LTD, Publishers,
Tokyo

Ferns for American Gardens (1994)
John Mickel
Macmillan Publishing Co.,
New York

Hardy Ferns (1968)
Reginald Kaye
Faber and Faber, LTD
London



Polystichum rigens. Photo by Kim N. Durrant, SLC, Utah.

The Ferns of Tasmania

Reviewed by James Merryweather

by Michael Garrett. Tasmanian Forest Research Council, Inc./- GPO Box 207B, Hobart, Tasmania - 7000, 1996. Hard cover (signed by the author, but only 100 copies) and paperback. Price: apply to BPS Booksales. ix plus 217 pp. 7 figures, 150 colour plates and 101 distribution maps. ISBN 072463519X

Tasmania has 100 native and one introduced species of pteridophyte, and Mike Garrett describes them all. Each has a page to itself which carries concise text and a distribution map plus reference to colour plates which form the central section of the book, but I'm aghast. Few fern books attempt to present a colour photograph of every species, and certainly, some of the plates will be duff ones. Not the case here! *The Ferns of Tasmania* seems to illustrate all, or virtually all of the 101, and there's not a mediocre picture among them. All are informative and some are stunning and must look wonderful on the screen. *The Ferns of Tasmania* begins with an informative introduction to the fern flora followed by a good treatment of the general biology of pteridophytes for the beginner, a guide to growing, discussion of the diversity, distribution and history of Tasmania's ferns and their ecology. Appendices include summary tables of ecological features and distributions outside Tasmania, glossary, what looks to be an practical dichotomous key, plentiful references and a comprehensive index. I think I'll have to dig very deep to find the criticism the enthusiastic reviewer is expected to include.

This book has been very intelligently designed, making reference and cross-reference easy. Where there is nothing to say, there's no distracting waffle, and clear page space is left uncluttered, a familiar aspect of modern book design. However, there is so much white on many pages, I wonder if we could not have been treated to a bit more information, perhaps amplifying the morphological information one would otherwise pick up from the key. I am a little concerned about the key. I tried *Ophioglossum lusitanicum* as if a beginner, and went wrong in the first couplet (actually a triplet). Even so, the brief text contains loads of information about each fern, including interesting aspects of distribution and ecology and despite being totally unfamiliar with this flora, I found myself informed and entertained; easily convinced to put Tasmania on my shopping list.

It seems that it will be difficult to order *The Ferns of Tasmania* in the UK; even Blackwell's couldn't help me. I hope that BPS booksales will be able to satisfy what ought to be a voracious market.

Reprinted with permission from *The British Pteridological Society Pteridologist Volume 3 Part 2, 1997.*

As a courtesy to members you may place orders for this book through the Hardy Fern Foundation. The price, \$35.00, includes shipping. Autographed hard-copies are available for \$80, which also includes shipping. Send checks to Sue Olsen, 2003 128th Ave. SE, Bellevue, WA 98005. Please allow several months for delivery.



Polypodiaceae Workshop

Dr. Alan Smith of the University of California Berkeley will conduct a two day workshop, **January 10 & 11, 1998** on the Polypodiaceae.

Historically, Polypodiaceae was defined to include most of the so-called "higher" ferns, perhaps 7,000 species. Nowadays, it is usually circumscribed more narrowly, to include *Polypodium* and closely allied genera, groups having mostly undivided to deeply lobed blades, round sori and lacking indusia. Many are among our most easily grown and attractive cultivated ferns, for example, *Platycerium*, *Aglaomorpha*, *Drynaria*, *Pyrrosia*, *Phlebodium* and *Polypodium* itself. Identification of genera and species, and cultivation recommendations will be the primary focus of this workshop.

The class is limited to 20 participants on a first-come, first-served basis. The charge is \$165. for non-members of the Friends of the Jepson Herbarium and \$150. for members. Registration should be sent to Friends of the Jepson Herbarium, 1001 Valley Life Sciences Building #2465, University of California, Berkeley, CA 94720-2465.

Shade Gardening with Hostas

Tim Morehouse - Cincinnati, OH

The most elegant foliage plants for the perennial shade garden are from the genus *Hosta* (except for ferns...Ed.) Victorian parks, cemeteries, and private gardens began to display hostas in the last decade of the 19th century. The plants were rugged, required little or no maintenance, and were ideal for the "naturalistic" approach advocated by William Robinson. In fact, in Victorian times the "Robinsonian approach" for using hostas was to plant them *en masse*. Robinson was not a man for doing things in a small way.

These plants are lush—with a tropical appearance—and provide a steady feature for herbaceous borders. They are full-stop plants. Gertrude Jekyll and William Robinson advocated the use of hostas (then known as *Funkia*) in their books, and in the United States, Beatrix Farrand, noted landscape gardener and creator of Dumbarton Oaks in Washington, D.C., often selected *Hosta sieboldiana* for her garden designs. When Jekyll and Robinson planted hostas, they were familiar with three varieties: *fortunei*, *plantagenia*, and *sieboldi*. Today these plants come in a wide selection of sizes and colors (the work of hybridizers in America and Europe): some are only 2 inches high while others grow into towering mounds 4 feet high and as wide. The primary feature of hostas is that they offer every conceivable possibility for garden design. *Hosta* leaves come in four basic shapes: round, lanceolate, heart-shaped, and triangular. Some are long and smooth, others deeply puckered (reminiscent of seer sucker cloth). Most important—especially to the designer—is the color of the leaf surface and the various ways in which it reflects light. Some *hosta* leaves are a pale gold, a shining green, others appear to be shellacked, while still others are a gray, steel blue. Depending upon the variety, the leaves can be streaked with gold, white or cream colorations or distinctively edged with the same.

Although hostas are primarily used as foliage plants adding weight and mass to the bones of a design, they do flower in pale lavender or white. The blooms are of secondary importance. There are a few exceptions: 'Honeybells', 'plantagenia grandiflora', and 'Royal Standard' offer a rich lily fragrance when in flower. In fact, Gertrude Jekyll used 'plantagenia' in tubs on her terrace for August flowers. This *hosta* is one of the oldest in cultivation in England and America and our grandmothers often referred to it as the "August lily".

Keen Victorian gardeners used hostas along woodland walks, in *hosta* borders, and along the margins of streams or ponds. If you garden primarily in full sun, take heart: you can try growing a few hostas under shrubs where they might receive shade for part of the day by creating your own micro-climate. Many of the gold-leaved hostas tolerate sun all day if their roots are moist. The specimen *hosta* 'Sum and Substance' (with leaves the size of tobacco plants) will grow in full sun. The best rule of thumb: when in doubt plant them in the shade. If you have a shady woodland garden adjoining your property, where you like to grow spring bulbs, use hostas as a cover up for dying bulb foliage later in the spring. Hostas provide a stunning encore for the remainder of the gardening season until the first fall frost.

Dry shade is a perplexing problem for most gardeners: little will bloom in such areas and the wide canopies of large trees absorb most of the moisture later in the season. Dig holes among the roots of these large trees (not against the trunks, but 10-15 feet away) and fill these spaces with a mixture of well-rotted manure, compost, or Canadian sphagnum peat moss (pre-dampened). Plant hostas but be sure that during the first season you supply water each week until the clumps are established. The trees will provide a winter mulch of leaves and—with time and patience—you can establish beautiful hostas in a dry, woodland setting. Hostas rarely need dividing, unless you want to increase your supply of a variety: just allow them to grow large and more beautiful each year. Much like peonies,

these plants will outlast the gardener.

Container gardening is popular today and hostas grow well in plastic pots. Keep in mind that it is very important that the container does not dry out. Terra-cotta is porous and if you fail to water on a regular basis the pot will draw moisture away from the roots. This situation is easily remedied by matching the container with the size of the *hosta*: simply sink a plastic pot inside your fancy, clay pot. As the *hosta* grows larger, transfer the plant to a larger pot. In the winter, move your plant to the garage or basement and keep it on the dry side while dormant. Hostas on a terrace combine well with ferns, impatiens, and begonias where they often add much needed weight, leaf-texture, and solid color to a shady corner. Some recommended varieties for containers are the following: *fortunei* (all forms), 'Golden Tiara', 'Green Fountain', 'kikutii' (all forms), 'Krossa Regal', 'Regal Splendor', 'Snowden', 'Summer Fragrance', and *undulata* (all forms). But I suggest experimenting with any *hosta* that strikes your fancy and not restricting yourself to this listing.

Hostas are extremely popular in the Midwest, lower New England, the upper South, and the Northwest. If in doubt, simply check with your local nursery. They do not like hot, dry weather for extended periods of time. They suffer from no diseases although slugs and snails may disfigure a leaf now and again. If the clumps grow too large for an area, dig them up in the spring and divide.

The origin of the *hosta* can be traced back to ancient China and Japan. At that time the *hosta* was known as *Giboshi Zoku* and is mentioned in a story which survives today from the Heian period (10th-12th centuries): Eldest Princess: The *Gentian* as a companion plant in the garden is excellent. It is comparable to the highest rank of the Imperial families. Second Princess: *Giboshi* must be compared to the rank of Empress. If you have both sunlight and shade in the garden it is time to cast your thoughts toward the shade. Consider foliage and texture and add the imperial *hosta* to your garden's itinerary.

References:

Bond, Sandra. HOSTAS. Ward Lock Limited, Villiers House, 41/47 Strand, London: 1992.

Schmid, Wolfram George. THE GENUS HOSTA, GIBOSHI ZOKU. Timber Press, 1991.

A brief bio:

Tim Morehouse is a garden writer, living in the lower Midwest. He is the garden columnist for *The Cincinnati Enquirer* and has published two books; *Basic Projects & Plantings for the Garden* and *Gardening Basics* both by Stackpole Books. His work appears frequently in *Horticulture*, *Flower & Garden*, *American Horticulturist*, *Victorian Homes*, *Victoria*, et. al.

SOURCES:

There are many nurseries that feature hostas. We can recommend the following HFF Members:

Wholesale:

Mark Zilis
Q&Z Nursery
28 W 563 Roosevelt Rd.
Winfield, IL 60190

Retail Mail Order:

Tony Avent
Plant Delights Nursery
9241 Sauls Rd.
Raleigh, N.C. 27603
*Catalog 10 stamps or
a box of chocolates.*

Very limited Retail Mail Order:

Nursery open to visitors daily except
Wed. mornings by appointment;
Dorothy Hood
Pine Hill Farm Nursery
7012 Macbeth Way
Sykesville, MD 21784

HFF Supporters:

Mail order and by appointment
Thursday - Sunday:
Naylor Creek Nursery
2610 West Valley Rd.
Chimacum, WA 98325
Plant list \$1.00.



Toxin Alert

Reprinted with permission from The Avant Gardener, Vol. 29, No. 7, May 1997.

In 1975, a very toxic strain of *Escherichia coli* - a bacterium which is usually benign or beneficial in the human digestive tract - was found in people. *E. coli* 0157:H7 has since caused numerous outbreaks of severe illness and even fatalities across the country. Sources of contamination included water, milk, meat, apple cider, and salad greens.

National and state health authorities are tightening food safety controls from farm to neighborhood market. *E. coli* 0157:H7 is known to be living in the digestive systems of many animals and possibly birds, and is carried in their manure.

Growers and gardeners are cautioned to be very careful in using manure on their crops. Raw manure should never be used on or near food plants. The Maine Organic Farmer and Gardener Association's Organic Certification Program prohibits the use of manure or manure tea on root crops within 120 days of harvest and within 60 days of harvest on any crop. Since heat destroys *E. coli* 0157:H7, hot-composted manure is safe to use. (*Not recommended for ferns - ed.*) Secondly, wash all (included purchased) vegetables and fruits thoroughly in running water. This is vital to avoid danger from not only *E. coli* 0157:H7 but also other food-borne pathogens, including salmonella and listeria. If you use apple "drops" to make juice or cider, pick up only clean fruit and scrub and rinse it well.

An even more alarming warning concerning another fertilizer we use in our gardens is given in "Deadly Feasts", by Richard Rhodes (Simon and Schuster, \$24). He quotes Nobel Prize winner Dr. D. Carleton Gajdusek and theorizing that bonemeal may be made from cattle infected with mad cow disease. This is a spongiform disease, believed to be caused by protein crystals which turn animal and human brains into sponges. Dr. Gajdusek speculates that breathing in bonemeal dust could allow entry of these deadly proteins into the body, where they can lay dormant for years.

Other notes from the same issue of The Avant Gardener -

Swimming pool grade diatomaceous earth must not be used for insect control" it has been heated, converting its silica to a crystalline form long associated with the lung disease silicosis; horticultural or insecticidal DE is not dangerous and can be used with the normal precautions for any type of dust.

And for a fern tidbit - Bracken is Britain's Kudzu: bracken fern, *Pteridium aquilinum*, now covers 7% of the country's land area, has destroyed 20% of its heather moor, and harbors ticks which are causing a steady rise in Lyme disease.

(The Avant Gardener is published monthly and is available for \$20 per year at Box 489, New York, NY 10028.)



The Hardy Fern Foundation NEWSLETTER

The Hardy Fern Foundation Newsletter is published quarterly by the Hardy Fern Foundation, P.O. Box 166, Medina, WA 98039-0166.

Articles, photos, fern and gardening questions, letters to the editor, and other contributions are welcomed!

Please send your submissions to
Sue Olsen, 2003 128th Ave SE,
Bellevue, WA, 98005.

Newsletter:

Editor: Sue Olsen

Assistants: Janet Dalby, Sylvia Duryee,
Sue & Herman Entz

Graphics: Karie Hess

The Hardy Fern Foundation Web Page

The Hardy Fern Foundation is on the web. It was flung out into cyberspace in March 1997 and at first no one noticed. Since then we have been picked up by most of the search engines*. Set your browser* to <http://darkwing.uoregon.edu/~sueman>.* I am sueman(my web/net ID) better (?) known as Sue Mandeville, fern web-mistress of the glade. Bubba Baxter, our beloved spore curator and the American Fern Society's web-master, got me into this by asking for help. I volunteered, thinking I was volunteering for some data entry into the Hardy Fern Foundation's webpage. Instead Bubba said, "no, I want you to make the webpage, thanks a lot." It was great fun, I couldn't have done it without Bubba's encouragement.

I work as a secretary at the University of Oregon and used the University's resources (classes, the computer library, and the University's free access to the web), to learn enough web language to make a simple but presentable webpage for us. There is a lot of room for improvement, but I am pleased that the Hardy Fern Foundation is now represented on the web. I e-mail with several members and hope to get an e-mail-members list distributed.

We have 3 "webpages"* so far: page one is the Welcome page (that page has been printed out, see pg. 31), page two is the Become a Member page, and page three lists the Satellite and Display HFF gardens, with links* to the gardens themselves if they have a webpage to link to.

As shown on our Welcome page we are linked with [The American Fern Society](#) and the [Fern Resource Hub](#) (The San Diego Fern Society's webpage). We in turn are listed/linked on their webpage too.

Results of being on the web: At least one new member has been recruited off the web, the page is going to be listed in Barton's "Gardening by Mail" book, and Sue Olsen just told me the webpage will be listed in an article in the Garden Gate magazine.

Future plans? I would like to hear from other members about what they would like to see on the HFF webpage. The HFF webpage should not compete with the American Fern Society or the Fern Resource Hub. Please look at what these two fern webpages has to offer before sending me ideas (or send them to Sue Olsen), because I don't think duplicating information is of any value to our members. Besides it takes time to update the webpages, and the web makes it so easy to just go to other pages that have that information. My feelings are that the HFF webpage should direct our efforts towards the HFF members needs, with protected e-mail and memberships lists, maybe eventually have a gallery of ferns that the HFF has distributed, or a gallery of members favorite ferns with complete information. I would appreciate any suggestions, or contributions. Sue Olsen has mentioned having excerpts from the HFF newsletter online, a good start.

I still need to learn an awful lot about images on the net. Lan Bradner has supplied me with several fern images that we are experimenting with. Nancy Swell is another web volunteer. I would encourage other HFF members to submit ideas of what they would like to see in the web page.

If you don't have a computer, get one. The contacts with other gardeners is worth the price alone. The web gives you access to the world's experience of gardeners. Either by e-mail, webpages, by newsgroups, list servers, or chat groups.

*list of definitions:

***browser:** Your software interface with the net/web. I use Netscape.

***html:** stands for hyper text markup language, the printed commands that make the webpage.

***<http://darkwing.uoregon.edu/~sueman>:** This is the HFF web address, http stands for hypertext transfer protocol.

***link:** is a quick way of moving to another webpage, using html* I embed the web/http address into the text, the address shows up as an underlined colored location (eg. [Hardy Fern Foundation](#) would stand for <http://darkwing.uoregon.edu/~sueman>), when you click on the underlined name the browser* takes to you to that webpage address.

***search engine:** A free service to people(consumers) that is sponsored by advertisements and offers a word search and retrieve service for web pages. I registered the Hardy Fern Foundation with AltaVista and Yahoo search engines.



The Hardy Fern Foundation

is a non-profit, membership organization established to provide a comprehensive collection of the world's hardy ferns for display, testing, evaluation, public education and introduction to the gardening and horticultural community. There are many beautiful ferns that are easily grown, but little known in cultivation. The Hardy Fern Foundation was formed to seek out the many rare and unusual species as well as hybrids and varieties to be propagated from spore and tested in selected environments for their different degrees of hardiness and ornamental garden value.

Our members participate in a spore exchange, receive a quarterly newsletter and have first access to ferns as they are ready for distribution. It is a unique opportunity to participate in and contribute to expanding horticultural knowledge and the introduction of new plants into cultivation.

Become a member!

HFF Satellite and Display Gardens

Link to The Fern Resource Hub---WOW!!

Must see! American Fern Society Link

Calendar of Events

*"Nature made ferns for pure leaves to show what she could do in that line."
Henry David Thoreau*

Satellite Gardens

Rhododendron Species Botanical Garden

P. O. Box 3798
Federal Way, WA
98063
(206) 838-4646

This beautiful 25 acre garden, situated at Weyerhaeuser Corporate Headquarters, houses the Hardy Fern Foundation's primary display and test garden with over 100 different species and cultivars in a landscaped setting among rhododendrons, mature conifers, and other collections. Visitors will see extensive plantings of *Dryopteris*, *Polystichum*, *Athyrium*, and other hardy material. The major plantings are in the lower study garden, around the pond and in the alpine area. The garden is open from March through May from 10 a.m. to 4 p.m. except Thursday and from June through February from 11 a.m. to 4 p.m. except Thursdays and Fridays.

Stephen F. Austin State University Arboretum

P.O. Box 13000
Nacogdoches, TX 75962
(409) 468-4343

Birmingham Botanical
Garden
2612 Lane Park Road
Birmingham, AL 35223
(205) 879-1227

California State Univ. Dallas Arboretum and
Botanical Society
6000 J Street
Sacramento, CA 95817
(916) 278-7369
8617 Garland Road
Dallas, TX 75218
(214) 327-8263

Denver Botanic
Garden
1005 York Street
Denver, CO 80206
(303) 331-4000

Georgeson Botanical
Garden
309 O'Neill Building
University of Alaska
Fairbanks, AK 99775
(907) 474-7433

Inniswood Metro
Gardens
940 S. Hempstead Road
Westerville, OH 43081
(614) 895-6216



The Hardy Fern Foundation

New Members receive a welcome packet which includes a Directory of Fern Gardens and Nurseries in the United States, a brochure on fern propagation, a brochure on fern pests and diseases along with remedies, the most recent newsletter, a spore list, a membership list and a source list.

HFF Newsletter Contents---Winter 1997

James Wood Dyce, Addenda 1996 Spore Exchange, Satellite Profile, The Unchanging Fern, *Polystichum acrostichoides*, Member's Garden Evaluations, Southern Alpines '96 and Beyond.

Membership Classifications: Membership Application:

Check one

____ Student-----\$10
____ Active-----\$20
____ Family-----\$25
____ Contributing---\$100
____ Supporting---\$500
____ Patron-----\$1000

Name: _____

Address: _____

Phone: _____

Email: _____

Print this page and send to address shown below.

Make checks payable to:

The Hardy Fern Foundation
P. O. Box 166
Medina, WA 98039-0166

A non-profit organization. Your membership payment & contributions are tax deductible to the extent allowed by law.

Harry P. Leu Botanical Garden

1920 North Forest Avenue
Orlando, FL 32803
(407) 246-2620

New York Botanical Garden

Bronx, NY 10458
(718) 817-8700

Strybing Arboretum

Golden Gate Park
9th Ave. at Lincoln Way
San Francisco, CA 94122
(415) 661-5817

Display Gardens

Lakewold Gardens
12217 Gravelly Lake Dr.
Tacoma, WA 98499
(206) 584-4106

Les Jardins de Metis
Case Postale 242
Mont-Joli
Quebec, Canada
G5H 3L1

University of Northern Colorado
Ross Hall Science Center
Greeley, CO 80631
(303) 351-1890

The Hardy Fern Foundation Web Pages

<http://darkwing.uoregon.edu/~sueman>

Georgeson Botanical Gardens Evaluation

Following a killing frost on Sept 4, 1995 Interior, Alaska residents were treated to a wonderfully balmy Indian Summer. Warm weather persisted into October, and many native plants began blooming. Winter arrived in mid October, and the succeeding months brought an extremely low accumulation of snowfall. The total accumulation through late January 1996 was only 6 inches. During that time the minimum winter air temperature at the Garden reached -43 degrees F in December and -48 degrees F in January. As a result of the warm autumn and lack of snowfall, 33 percent of the experimental plants in the Garden were killed.

Damage could have been caused by failure of plants to fully acclimate, extreme winter desiccation or an inability to tolerate low temperature extremes in the absence of snow cover. Throughout the Interior, and as far south as Anchorage, businesses and homeowners had similar stories of extensive winter kill. Lawns were especially vulnerable, but many perennials did not survive. Even reliable species that had been cultivated in the Fairbanks area for more than 50 years were killed.

Many perennials were killed outright, but others such as peony, grape hyacinth and some ferns showed significant root damage. In some instances, they did not begin to grow until mid July. Some species never recovered fully, and probably will not re-appear in 1997.

Spring planting date for tender annual flowers and vegetable transplants is after June 1, the normal date of last spring frost. In 1996, temperatures on June 5 were 30.5 degrees F. Throughout the Interior, damage to annual flower and vegetable crops was extensive. Ferns showed slight damage to emerging fronds, but damage did not interfere with subsequent growth.

Early summer was very dry, exacerbating recovery of injured plants. On the contrary, the latter half of the summer was cold and wet. The accumulated growing degree days rivaled the very short and cold 1992-93 season. Sweet corn did not mature and yield of warm season vegetables was reduced. All surviving ferns performed well despite the rains.

The low snowfall, late spring frost, and cold wet summer combined to make the 1996 season one that most people would rather forget. Gardeners are facing thousands of dollars in replacement costs for brown lawns and dead or injured landscape plant materials. We now have plenty of room in our test plots for more experimental plants because so many died.

	Season				
	1992	1993	1994	1995	1996
Average temperature °F					
May	40.6	51.9	52.0	52.3	44.1
June	59.1	60.5	57.0	58.5	57.3
July 63.0	64.5	62.0	61.9	61.9	
August	55.9	55.5	51.0	55.6	52.1
September	31.4	42.5	43.0	50.6	41.2
Maximum temperature °F					
	90	91	89	85	82
Growing season					
Last spring frost	June 7	May 1	May 6	May 22	June 5
First fall frost	Sept 5	Sept 1	Aug 23	Sept 4	Aug 27
Frost-free days	90	123	109	105	83
Thaw degree days ¹	2568.0	3547.5	3476.3	3676.5	2810.5
Rainfall (inches) ²	8.78	6.67	7.21	10.15	8.73
Previous winter season					
Minimum temperature °F	-35	-52	-37	-48	-48
snowfall (inches)	103.8	131.7	36.3	69	47.8

¹ May through September 32°F base temperature

² May through September

HARDY FERN FOUNDATION

Georgeson Botanical Gardens

EVALUATION FORM 1997

Fern Name	Accession No.	# Alive	# Dead	Avg. overall size, in/cm	Length of new growth	Has it borne spore in the past year?	Does it have commercial value?	Winter Survival Rating*
<i>Adiantum aleuticum</i>	12563	7			3	N		3.5
<i>Adiantum venustum</i>	12548	5				N		0
<i>Adiantum venustum</i>	12548	5				N		0
<i>Asplenium trichomanes</i>	12549	5						0
<i>Athyrium filix-femina</i>	9235	10		11	16	N		2.9
<i>Cystopteris bulbifera</i>	9236	10		6	8	N		3.7
<i>Dryopteris affinis</i>	12550	5				N		0
<i>Dryopteris arguta</i>	12541	5				N		4
<i>Dryopteris campyloptera (austriaca)</i>	9963	10		3	3			3.3
<i>Dryopteris celsa</i>	12551	5				N		0
<i>Dryopteris championii</i>	12552	5				N		0
<i>Dryopteris crassirhizoma</i>	12553	5				N		0
<i>Dryopteris cycadina (atrata)</i>	12554	5				N		0
<i>Dryopteris dilatata 'Jimmy Dyce'</i>	12542	5				N		4
<i>Dryopteris dilatata 'Lepidodonta cristata'</i>	12546	5				N		4
<i>Dryopteris filix-mas</i>	9240	10		12	19	Y		1.7
<i>Dryopteris filix-mas 'Undulata robusta'</i>	12540	5				N		4
<i>Dryopteris fragrans</i>		10		5	5	N		3.7
<i>Dryopteris marginalis</i>		10		5	5	N		3.5
<i>Dryopteris pseudo filix-mas</i>	12555	5				N		0
<i>Dryopteris sabae</i>	12564	2				N		4
<i>Dryopteris sacrosancta</i>	12565	10		7	8	Y		2.8
<i>Dryopteris sublacera</i>	12557	10				N		0
<i>Dryopteris wallichiana</i>	12566	8				N		2
<i>Lygodium japonicum</i>	12559	1				N		0
<i>Matteuccia struthiopteris</i>		13				N		0
<i>Phegopteris connectilis (Thelypteris)</i>	10669	3		12	22	N		1.33
<i>Polypodium virginianum</i>	10667	10		10	10	N		3.6

HARDY FERN FOUNDATION

Georgeson Botanical Gardens

EVALUATION FORM 1997

Fern Name	Accession No.	# Alive	# Dead	Avg. overall size, in/cm	Length of new growth	Has it borne spore in the past year?	Does it have commercial value?	Winter Survival Rating*
<i>Polystichum acrostichoides</i>		6				N		4
<i>Polystichum andersonii</i>		5				N		0
<i>Polystichum braunii</i>	12567	10		10	15	Y		0
<i>Polystichum lemmonii</i>	12568	9		1.5	2.5	N		3.77
<i>Polystichum setiferum</i>	12569	10				Y		2
<i>Polystichum sp.</i>		2		16	18	Y		0
<i>Pteris excelsa</i>	12570	2				N		4
<i>Thelypteris viridifrons</i>	12571	4				N		4
<i>Woodsia polystichoides</i>	12562	5				N		0
<i>Woodwardia fimbriata</i>	12572	3				N		4

*winter survival 0=no visible injury; 1=slight injury; 2=moderate injury; 3=severe setback, recovery questionable 4= killed

The Rhododendron Species Foundation and Botanical Garden Evaluation

The Rhododendron Species Foundation and Botanical Garden

Evaluation for Hardy Fern Foundation

Fern Name	Accession Number	Number Alive	Overall Size in.	Spore past yr.	Commercial Value	Garden Worthiness
Adiantum pedatum	90/322	2	36	yes	yes	5
Adiantum pedatum (dwf)		many	10	yes	yes	5
Adiantum venustum	90/149	many	12	no	yes	5
Arachnoides simplicior var major	90/147	1	36	yes	yes	5
Asplenium trichomanes Incisum	91/038	4	10	yes	yes	5
Athyrium filix-femina var Bornholmiense	90/151	1	18	yes	yes	5
Athyrium filix-femina var Angustum	90/154	1	16	yes	yes	3
Athyrium filix-femina var minutissimum	90/290	3	12	yes	yes	4
Athyrium nip. 'Metalicum cristata-Flabellatum		1	10	yes	yes	3
Athyrium niponicum	90/291	2	24	yes	yes	5
Athyrium niponicum var Pictum	90/132	8	24	yes	yes	5
Athyrium otophorum	90/129	8	30	yes	yes	5
Athyrium vidalii	90/133	1	8	no	yes	3
Blechnum penna-marina	093/93	patch	7	yes	yes	5
Blechnum spicant	90/282	3	24	yes	yes	5
Blechnum spicant var Serratum Rickard	90/283	4	12	yes	yes	5
Cryptogramma crispa		patch	10	yes	yes	5
Cyrtomium	91/049	4	24	yes	yes	5
Cyrtomium caryotideum	91/040	6	18	yes	yes	5
Cyrtomium falcatum x caryotideum	90/146	1	18	yes	yes	5
Cyrtomium fortunei var Intermedium	90/286	1	10	yes	yes	4
Cyrtomium lonchitoides	187/94	3	18	yes	yes	5
Cyrtomium macrophyllum	90/285	4	24	yes	yes	5
Dryopteris aemula	90/296	2	10	yes	yes	4
Dryopteris championii	90/303	1	12	yes	yes	5
Dryopteris clintoniana x goldiana	90/375	1	42	yes	yes	4
Dryopteris cycadina	90/376	6	36	yes	yes	5
Dryopteris cystolepidota	168/94	6	24	yes	yes	5
Dryopteris darjeelingensis	186/94	5	18	yes	yes	5
Dryopteris dilatata	90/294	1	30	yes	yes	5
Dryopteris dilatata Lepidota 'crispa'	90/373	6	24	yes	yes	5
Dryopteris dilatata var Recurvata	90/139	7	30	yes	yes	5
Dryopteris erythrosora	90/126	3	24	yes	yes	5
Dryopteris f-m 'Undilata-Robusta'	90/136	8	48	yes	yes	5
Dryopteris f-m var linearis Polydactyla	90/135	8	36	yes	yes	5
Dryopteris filix-mas	90/324	1	36	yes	yes	5
Dryopteris filix-mas	90/159	1	42	yes	yes	5
Dryopteris formosana	91/050	8	24	yes	yes	5
Dryopteris lacera	90/311	1	18	yes	yes	3
Dryopteris lepisopoda	185/94	6	24	yes	yes	5
Dryopteris ludoviciana	90/160	7	12	yes	yes	3
Dryopteris polylepis	90/308	1	36	yes	yes	5
Dryopteris pseudo filix-mas	90/161	1	48	yes	yes	5
Dryopteris remota	91/043	5	36	yes	yes	5
Dryopteris scottii	184/94	3	2	no	no	2
Dryopteris sieboldii	90/293	2	16	yes	yes	4
Dryopteris varia var. Setosa	90/127	12	24	yes	yes	5
Dryopteris wallichiana	90/138	6	42	yes	yes	5
Gymnocarpium dryopteris	90/130	patch	16	no	yes	5
Gymnocarpium dryopteris var Plumosum	90/131	patch	12	yes	yes	5
Matteuccia struthiopteris	90/292	patch	24	yes	yes	5
Osmunda cinnamomea		patch	60	yes	yes	5
Osmunda claytonia	90/302	2	30	yes	yes	5
Osmunda regalis		5	60	no	yes	5

The Rhododendron Species Foundation and Botanical Garden

Evaluation for Hardy Fern Foundation

Fern Name	Accession Number	Number Alive	Overall Size in.	Spore past yr.	Commercial Value	Garden Worthiness
<i>Phegopteris connectilis</i>	90/155	2	16	yes	yes	5
<i>Phegopteris decursive-pinnata</i>	90/128	patch	24	yes	yes	5
<i>Phyllitis scolopendrium</i>	90/289	1	12	yes	yes	5
<i>Polypodium scolopendrium</i>	90/287	patch	12	yes	yes	5
<i>Polystichum acrostichoides</i>	90/145	6	12	yes	yes	3
<i>Polystichum aculeatum</i>	90/305	1	16	yes	yes	5
<i>Polystichum braunii</i>	90/164	4	18	yes	yes	5
<i>Polystichum californicum</i>	90/326	1	12	yes	yes	5
<i>Polystichum californicum</i>	91/044	4	8	yes	yes	5
<i>Polystichum makinoi</i>	91/045	8	12	yes	yes	5
<i>Polystichum neolobatum</i>	91/046	7	12	yes	yes	5
<i>Polystichum polyblepharum</i>	90/165	6	18	yes	yes	5
<i>Polystichum retroso-paleaceum</i>	90/313	1	24	yes	yes	5
<i>Polystichum setiferum Plumosum-Divisilobum</i>	90/141	1	3	no	yes	5
<i>Polystichum setiferum Rotundatum cristatum</i>	90/284	5	8	yes	yes	5
<i>Polystichum setiferum var congestum</i>	90/143	7	2	no	yes	5
<i>Polystichum setiferum var Divisilobum</i>	90/142	1	8	no	yes	5
<i>Polystichum setiferum var thompsonii</i>	90/140	1	6	no	yes	5
<i>Polystichum sp. China</i>	90/162	2	16	yes	yes	5
<i>Polystichum squarrosum</i>	90/312	1	12	yes	yes	5
<i>Polystichum tsus-simense</i>	90/163	7	8	yes	yes	5
<i>Polystichum x illyricum</i>	90/304	1	12	yes	yes	5
<i>Polystichum yaemonse</i>	90/166	1	18	yes	yes	5
<i>Thelypteris noveboracensis</i>		patch	16	yes	yes	5
<i>Woodsia obtusa</i>	90/310	1	16	yes	yes	5
<i>Woodwardia areolata</i>	90/167	patch	16	yes	yes	4

HARDY FERN FOUNDATION

EVALUATION FORM

FERNS SHIPPED, Spring 1995 Inniswood Metro Gardens

Fern Name	Accession Number	# Alive	# Dead	Avg. overall size, in/cm	Length of new growth	Has it borne spore in the past year?	Does it have commercial value?	Garden worthiness rate 1 to 5, low to high
<i>Athyrium f-f vernoniae</i>		3	1	15" - 18"	18"	yes	yes	5
<i>D. sacrosancta</i>		5		10"	11"	yes	Yes	
<i>D. wallichiana</i>		2	1	11"	11"	no	Yes	3 4
<i>Dryopteris erythrosora</i>		4		12"	12"	yes	yes	4
<i>Phyllitis scolopendrium</i> , near lg. lime	stone rocks	4		12"	14"	yes	yes	5
<i>Pteris excelsa</i>			2				not here	
<i>Thelypteris viridifrons</i>		3	2	24" - 30"	30"	yes	yes	5
<i>Woodwardia fimbriata</i>		3		14"	14"	no	wait 1 yr	surprise it lived

Completed by: Carolyn Stamm & Liz Bork

9-96

Our winter was about average in temp, (95-96) but we had an unusually high, near record amount of snow cover, & a cool, wet, spring

Leu Gardens Evaluation

Here is an update of the ferns being tested here at Leu Gardens. The ferns were planted in a full shade location, located near a creek which runs through the gardens. Our thinking was that after the ferns become established, they can be dispersed throughout the gardens. Within the first month of planting in September of 1996 there were 3 which had problems: *Adiantum venustum*, *Asplenium trichomanes*, and *Woodsia polystichoides*. Temperatures were in the 90's during the day, and I think that may have been a factor. In January all 5 *Dryopteris celsa* plants died. At that time I was watering 1 time/week, however I realized that I was not giving them enough water. We have had an extremely dry winter and since I have increased watering they have done much better.

I have kept a log of the daily temperatures since planting in September. On the fern species which have died, I'm confident that the watering was the cause of the problems and have corrected this.

HARDY FERN FOUNDATION FERNs SHIPPED, September 1996 Leu Gardens EVALUATION FORM

Fern Name	Accession Number	# Alive	# Dead	Avg. overall size, in/cm	Length of new growth	Has it borne spore in the past year?	Does it have commercial value?	Garden worthiness rate 1 to 5, low to high
<i>Adiantum venustum</i>		5						dead
<i>Asplenium trichomanes</i>		5						poor
<i>Dryopteris affinis</i>		5						excellent
<i>Dryopteris celsa</i>		5						dead
<i>Dryopteris championii</i>		5						good
<i>Dryopteris crassirhizoma</i>		5						poor
<i>Dryopteris cycadina</i>		5						excellent
<i>Dryopteris pseudo filix-mas</i>		4						excellent
<i>Dryopteris sacrosancta</i>		5						good
<i>Dryopteris sublacera</i>		5						poor
<i>Dryopteris wallichiana</i>		5						good
<i>Lygodium japonicum</i>		2						good
<i>Polystichum andersonii</i>		5						good
<i>Polystichum setiferum</i>		5						good
<i>Woodsia polystichoides</i>		5						poor

Completed by: Mark House - March 1997



HARDY FERN FOUNDATION
FERNS SHIPPED, spring 1995
The Birmingham Fern Society
EVALUATION FORM

Fern Name	Accession Number	# Alive	# Dead	Avg. overall size, in/cm	Length of new growth	Has it borne spore in the past year?	Does it have commercial value?	Garden worthiness rate 1 to 5, low to high
Dryopteris atata		3	0	35"	18"	yes	yes	5
D. cycadina		2	0	32"	18"	yes		
D. sabae		1	0	10"	5"	no	no	1
D. sacrosancta		1	0	22"	12"	yes	yes	4
D. wallichiana		1	0	24"	18"	yes	yes	5
D. dilatata 'Lepidota Cristata'		1	0	7"	4"	no	no	1
D. complexa (robusta)		3	0	40"	20"	yes	yes	5
D. bissetiana		2	0	23"	12"	yes	yes	5
D. dilatata		3	0	9"	4 1/2"	yes	yes	3
Osmunda regalis 'Purpurascens'		1	0	30"	15"		yes	2
Athyrium otophorum		2	0	32"	18"	yes	yes	5
Phyllitis scolopendrium		1	0	23"	14"	yes	yes	3
Polystichum setiferum		2	0	28"	14-15"	no	yes	3
P. polyblepharum		1	0	32"	17"	yes	yes	5
Pteris excelsa		0						
Thelypteris decursive pinata		3	0	40"	20"	yes	yes	5
T. viridifrons		3	0	78"	39"	yes	yes	5
Woodwardia fimbriata		0						

Completed by: Linda Brock & Edythe Crumpton - December 1996

1997 Plant Distribution

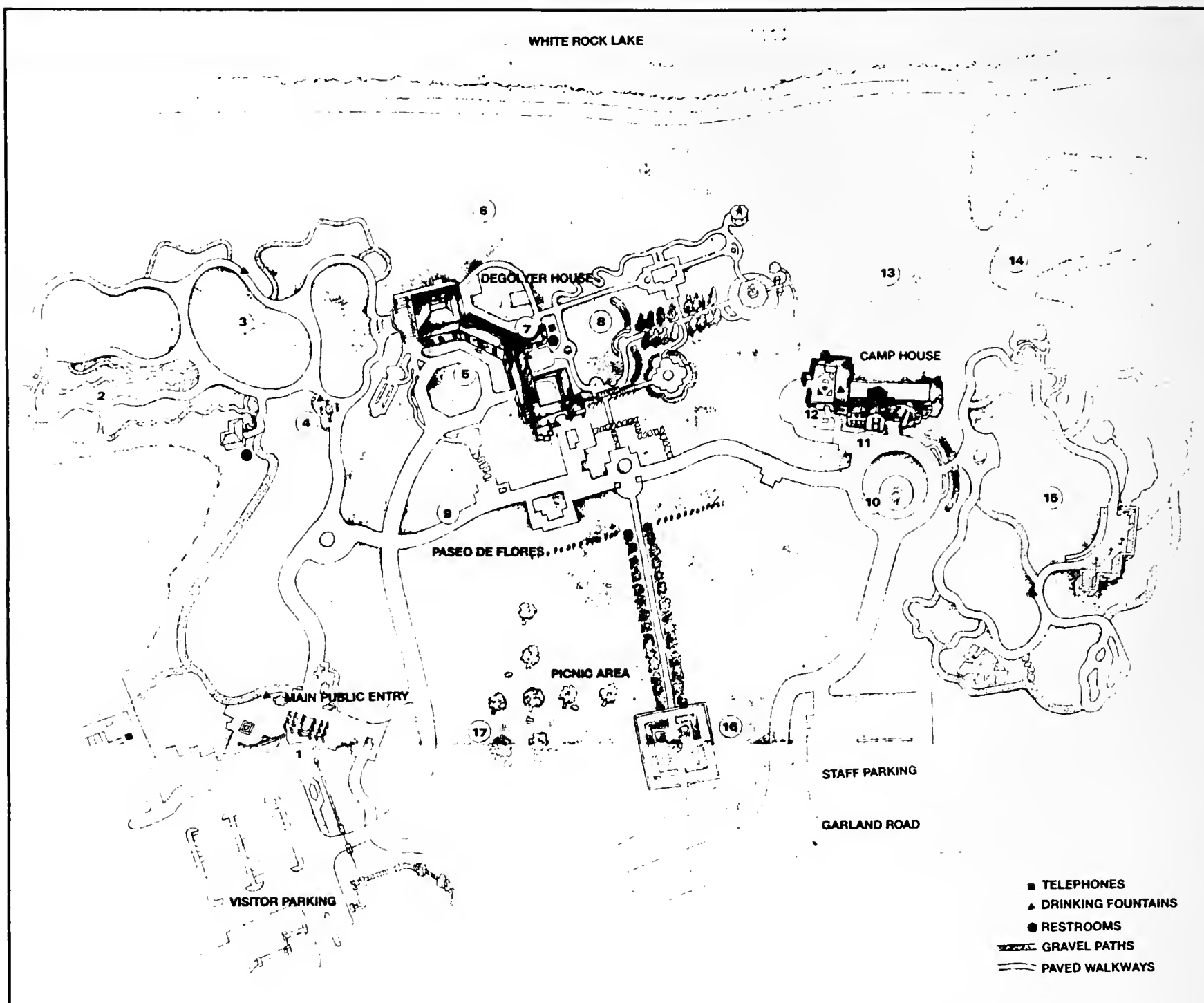
The following ferns are available for fall shipment. Orders should be sent to Michelle Bundy, 1716 S. 223rd St., Des Moines, WA 98198. Orders must reach her no later than Friday Sept. 5. You will be billed at the time of shipping.

Athyrium filix-femina 'Vernoniae Cristatum' - Zone 4 - 8, deciduous, crested, 2-3'
 Cyrtomium caryotideum - Zone 6 - 10, evergreen, 18"
 Cyrtomium macrophyllum - Zone 7 - 10, evergreen, 18"-2'
 Dryopteris affinis 'Cristata The King' - Zone 4 - 9, evergreen, 2-3'
 Dryopteris arguta - Zone 8 - 9, evergreen, 2'
 Dryopteris x complexa - Zone 4 - 8, evergreen 4'
 Dryopteris crassirhizoma - Zone 5 - 8, evergreen 2-3'
 Dryopteris dilatata 'Lepidota cristata' - Zone 4 - 8, evergreen 2'
 Dryopteris oreades 'Crispa' - Zone 4 - 8, evergreen, 2'
 Dryopteris pseudo filix-mas - Zone 5 - 8, semi-evergreen, 3'
 Dryopteris remota - Zone 4 - 8, semi-evergreen, 2-3'
 Dryopteris sieboldii - Zone 7 - 9, semi-evergreen, 2'
 Dryopteris stewartii - Zone 6 - 9, semi-evergreen 2-3'
 Dryopteris uniformis - Zone 5 - 8, evergreen, 2'
 Phegopteris decursive-pinnata - Zone 4 - 10, deciduous, 18"
 Polystichum polyblepharum - Zone 6 - 9, evergreen, 18"-2'
 Polystichum setiferum - Zone 6 - 8, evergreen, 2-3'
 Polystichum tsus-simense Zone 6 - 9, evergreen 18"



ALL OF THE ABOVE ARE AVAILABLE FOR \$5.00 EACH

Adiantum venustum - Zone 6 - 8, evergreen, 12"-18' **\$8.00**



Satellite Profile Dallas Arboretum and Botanical Garden Eugene Westlake, Dallas, Texas

The 66 acre botanical garden is set beside White Rock Lake in sight of downtown Dallas. The urban landscape is one of Dallas' greatest natural resources and one of the most scenic in the area.

Inside the Margaret Elizabeth Jonsson Color Garden is a 6.5 acre garden of color, home to a unique azalea collection, 5 large color beds, and the Palmer Fern Dell.

Naud Burnett, a local landscape architect, could not have designed a more enchanted garden. Naud created a microcosm for fairy tales, complete with a bridge for trolls and a dense rolling fog. For a few moments you are transported out of the Southwest and into the middle of a forest.

The Palmer Fern Dell features shade-loving plants and over 80 species of ferns which pack this 1.1 acre fern dell, offering a horticultural and ornamental contrast to the sun-filled Jonsson Garden. Serene and calm, the Fern Dell is kept damp with a concealed fog system, designed to give dimensions of intrigue and mystery. The fog originates from small nozzles that emit fog of minute size and is controlled by a timer. Although the Fern Dell appears damp, visitors remain dry.

Gentle sounds of nature are provided by the Fern Dell's stream that connects an upper and lower pond. These ponds are filled with aquatic plant life. Upon resting on a bench we notice the Hardy Fern Foundation satellite garden. The garden has tripled in size this last year thanks to Naud who has generously donated many new ferns to the collection. A row of azaleas has been removed and a whole new area for future expansion exists.

The HFF garden sits on the side of a small hill so that drainage is excellent. The soil is a mix of crushed pine bark mulch and peat. The acidic beds make it possible for us to grow many plants. The overhead canopy of native trees make it a perfect spot for ferns.

In recent years we recorded good growth on *Dryopteris complexa*, *Thelypteris*

decursive-pinnata, *D. bissetiana*, *D. arguta*, and *Polystichum setiferum* 'Divisilobum'. We lost some plants of *D. dilatata* 'Lepidota Cristata' and *Phyllitis scolopendrium* due to environmental conditions.

The weather in Texas is so unpredictable we really need a few years to evaluate the hardiness of the ferns. The summer of 1994 was mild compared to 1995. Yet, on record the temperatures were just normal. It will take some time and patience.

This is an ideal location for a satellite garden. There is quite an interest here in Dallas for these plants. More and more people are seeing the significance that ferns can add to their home. We are pleased just to be a part of it.



Mist in the Fern Dell. Photo by Naud Burnett.

All Purpose Deer - Slug - Insect Repellant for Plants Deciduous and Evergreen

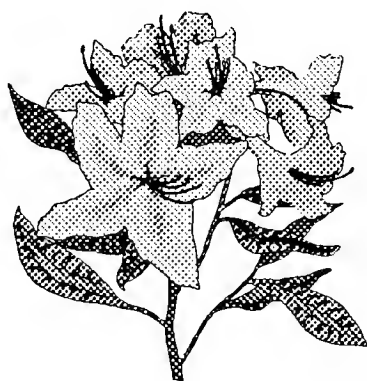
Joyce Descloux, Randolph, N.J.

In a kitchen blender put 2 cups water, 1-2 cups green onion tops, 1-2 cloves garlic, 3 whole eggs (the older the better) with shells.

Pulverize on chop speed 1-2 minutes

Add this to a pail in which you have dissolved strong bar soap (I use Fels-Naptha) either laundry type or deodorant.

Add about 1-2T of any of the following: ground red pepper, hot sauce, cumin, mustard or any spicy stuff on hand. Mix all together well.



I apply this to plants (like hosta, daylilies, ferns, evergreens to keep away deer) by dipping an old dish washing brush in the mix and flicking it over the plants or brushing it on daylily

buds. The residue at the bottom of the pail which contains a lot of onion fiber and eggshell is good for spreading on the ground or stones around ferns or small vulnerable plants to keep away slugs. It also deters most chewing worms and insects. I keep all eggshells and add crushed to the mix at the end to use this way. Keep some mix 1-2c. to add to the next batch. It will be "riper".

Joyce writes "I originated this mix about 10 years ago and have been using it successfully ever since. I could not grow many of my plants, particularly hostas, daylilies, azaleas and dwarf evergreens without it.

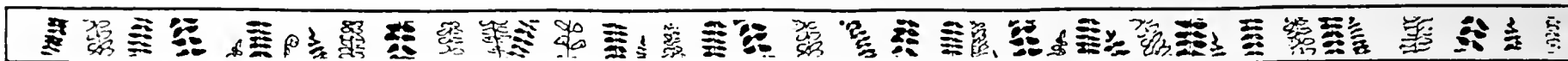
The recipe has been printed in Schmid's *The Genus Hosta*, Pam Harper's perennial book, *Fine Gardening* and various other publications, but it was originally from an article I wrote for the 1989 *Hosta Journal*.

Over the years I have refined it to make it simpler and better. I don't put it in a sprayer as it would clog it. I recommend making it ahead and letting it ripen. It will smell when first applied (attracting flies) but is soon not noticeable as it dries. But wear rubber gloves and old gardening clothes!

Specifically for slugs around small ferns, I am now experimenting with "bracelets" of copper wire. Let you know." (I understand this works quite well....Ed.)



We would be interested in other reader's slug remedies.....do write.



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| <input type="checkbox"/> Student | \$10.00 |
| <input type="checkbox"/> Active | \$20.00 |
| <input type="checkbox"/> Family | \$25.00 |
| <input type="checkbox"/> Contributing | \$100.00 |
| <input type="checkbox"/> Supporting | \$500.00 |
| <input type="checkbox"/> Patron | \$1000.00 |
| <input type="checkbox"/> Matching Gift Program | |
| Many companies will match their | |
| employee's contributions. | |
| Employer _____ | |
| <input type="checkbox"/> Donation to Endowment Fund | |
| In addition to my membership I would like to | |
| contribute to the endowment fund. | |
| Amount _____ | |

MEMBERSHIP APPLICATION:

FIRST NAME _____

LAST NAME _____

ADDRESS _____

CITY _____

STATE _____

ZIP _____

PHONE _____

AMOUNT ENCLOSED _____

Make checks payable to:

The Hardy Fern Foundation
P.O. Box 166
Medina, Washington 98039-0166

A non-profit organization.

*Your membership payment & contributions are tax deductible
to the extent allowed by law.*

Hardy Fern Foundation

P.O. Box 166

Medina, WA 98039-0166

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